

City of Alexandria, Virginia

# Stormwater Requirements & Grant Opportunity to Fund Retrofit of Ben Brenman Pond

**Park and Recreation Commission**

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## Improving the Health of the Chesapeake Bay



- EPA has determined a Total Maximum Daily Load (TMDL) of pollution that the Chesapeake Bay can absorb and still maintain acceptable water quality
- Achieving required pollution reductions for municipalities is mandated through changes to:
  - Municipal Separate Storm Sewer System (MS4) Permits
  - The Virginia Stormwater Management Program (stormwater requirements for development projects)

## Chesapeake Bay TMDL Pollution Reduction Targets, Schedule and Cost



Permit Cycle	TN (lbs)	TP (lbs)	TSS (lbs)	Approx. Acres
First MS4 Permit Cycle Target (5%) (2008-2013)	380	50	43,097	~120 - 300
Second MS4 Permit Cycle Target (35%) (2013-2018)	2,659	352	301,678	~660
Third MS4 Permit Cycle Target (60%) (2018-2023)	4,558	603	517,162	~1450
Total Reduction Target (100%) (2008-2023)	7,597	1,005	861,937	~2405

Estimated costs to meet required target is between **\$75-\$100 million**

## Progress to Date



- Compliance Plan includes:
  - Projected stormwater credit from private redevelopment
  - Identification of potential opportunities for retrofit on City properties / City rights-of way
  - Leveraging existing regional facilities through retrofits
    - 2013 SLAF Grant Award for Retrofit of Lake Cook for \$1.2M
      - Achieves a 11% phosphorous removal credit towards TMDL

## Stormwater Local Assistance Fund (SLAF) Grant



- SLAF Grant is a 50/50 cost match grant offered by Virginia Department of Environmental Quality (VDEQ) for stormwater retrofit projects to meet Chesapeake Bay TMDL
- Project are ranked heavily on the cost effectiveness (\$/lbs. of pollutant removed) and stormwater ponds are one of the most cost effective strategies available
- 2013 was first year for SLAF, and City received a \$1.2M grant for the retrofit of Lake Cook (\$2.4M Total Cost)
- 2014 applications are due October 24
  - Potential project for 2014 SLAF is the Retrofit of Ben Brenman Pond for up to \$1.75M (\$3.5M Total Cost)

5

## 2014 SLAF Grant Opportunity: Retrofit of Ben Brenman Pond





- Cost effective strategy for reduction of phosphorous, nitrogen and sediment
- Excellent opportunity for grant funding
- Enhancement of facility would increase efficiency **and** treat additional acreage
- Project approved in CIP FY2015-2024
- Included in Citywide Parks Improvement Plan (Approved April 2014)
- Project would begin design in FY2016 (with grant) or FY2017 (w/o grant)

6

## Ben Brenman Pond Background



- Ben Brenman Pond was upgraded to a stormwater management facility as part of the Cameron Station residential development in the late 1990s.
  - Cameron Station Development drainage area  $\approx$  100 acres
- The pond not only treats the runoff from the Cameron Station development, but also additional runoff from properties to the north and along Duke Street.
  - Total existing drainage area  $\approx$  220 acres

7

## Ben Brenman Pond Background



- Both the pond and the park are a popular amenity for the community and are widely used.
- The pond includes a trickling up flow filter and sediment forebay.
  - The upflow filter is a low maintenance facility with aggregate media that has improved downstream water quality
  - The sediment forebay is designed to capture both trash and sediment, preventing it from discharging downstream and ultimately into the Potomac River.

8

## Ben Brenman Pond Opportunities / Benefits



- Current pond has enough treatment volume to treat additional runoff
  - Potential to direct additional 33 acres of offsite area west of Armistead Boothe Park into pond.
- Additional water treatment features like
  - aquatic benches
  - enhanced aeration
  - floating island and/or wetlands
  - additional cells
  - enlarged forebay

9

## Ben Brenman Pond Opportunities / Benefits



- The project seeks to provide improvements to existing amenities:
  - Potential for new trail connection(s) across pond
  - Providing new landscape to discourage geese and provide habitat for riparian birds and animals
  - Adding educational signage with ecological information around trail

10